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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,795	01/13/2004	Johan HULTEN	07589.0147.PCUS00	1794
28694	7590	06/22/2004	EXAMINER	
TRACY W. DRUCE, ESQ. 1496 EVANS FARM DR MCLEAN, VA 22101			SY, MARIANO ONG	
			ART UNIT	PAPER NUMBER
			3683	

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/707,795

Applicant(s)

HULTEN ET AL.

Examiner

Mariano Sy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01132004, 03312004</u> . | 6) <input type="checkbox"/> Other: ____  |

### DETAILED ACTION

1. The disclosure is objected to because of the following informalities:

Abstract, line 11 "wheel-axle housing (3)" should be --wheel-axle housing--,

Claim 2, line 3 "which attachment seats" should be --said attachment seats--,

Claim 11, line 3 "which activating lever" should be --said activating lever--.

Appropriate correction is required.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

### *Drawings*

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "Z-cam" as described on paragraph [0040] in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-13, 25, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "they are caused to bear against" in lines 8-9. It is unclear what applicant is referring to.

Claim 3 recites the limitation "it at least partially surrounds" in line 3. It is unclear what applicant is referring to.

Claim 13 recites the limitation "it can be pivoted" in lines 2-3. It is unclear what applicant is referring to.

Claim 25 recites the limitation "a wheel-axle housing" in lines 4-5. It is unclear if applicant is referring to the same or different wheel-axle housing as recited in claim 14.

Claim 26 is indefinite due to its dependency on claim 25.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-5 and 14-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Mohr et al. (U.S. Patent Number 6,412,608 B1).

Re-claim 1 Mohr et al. discloses, as shown in fig. 5, a disc brake comprising: a brake disc rotating with a wheel axle; a brake caliper mounted in a nonrotating wheel-axle housing arranged about said wheel axle, and two brake linings 13a, 13b when acted upon by an activating mechanism 21 are caused to bear against sides of the brake disc; said caliper comprises two brake-lining holders 12, 15, 20 which are axially displaceable relative to one another and relative to the wheel-axle housing, and the brake-lining holders each have at least one actuation surface 12a, 20a for engagement with said activating mechanism, wherein the brake-lining holders are displaced toward each other upon activation.

Re-claim 2 Mohr et al. discloses, as shown in fig. 5, wherein the brake-lining holders have attachment seats for said brake linings, said attachment seats are placed at a distance from said actuation surfaces.

Re-claim 3 Mohr et al. discloses, as shown in fig. 5, wherein an outer brake-lining holder 15, 20 at least partially surrounds an inner brake-lining holder 12 in the axial direction of the wheel axle.

Re-claim 4 Mohr et al. discloses, as shown in fig. 5, wherein the actuation surface 12a of the inner brake-lining holder is directed toward a corresponding actuation surface 20a of the outer brake-lining holder.

Re-claim 5 Mohr et al. discloses, as shown in fig. 5, wherein said activating mechanism is axially fixed in relation to the wheel-axle housing and comprises a separating member 22 acting between said actuation surfaces for mutual axial displacement of the brake-lining holders.

Re-claim 14 Mohr et al. discloses, as shown in fig. 5, a method for providing a disc brake in a vehicle comprising: providing a brake disc rotatable with a wheel axle; configuring a brake caliper to be movable in a non-rotating wheel-axle housing arranged about the wheel axle; providing two brake linings 13a, 13b when acted upon by an activating mechanism 21 are caused to bear against sides of brake disc; providing said brake caliper with two brake-lining holders 12, 15, 20 that are axially displaceable relative to one another; and configuring the brake-lining holders to each have at least one actuation surface for engagement with said activating mechanism when brake-lining holders are displaced toward each other upon activation.

Re-claim 15 Mohr et al. discloses, as shown in fig. 5, wherein the brake-lining holders have attachment seats for said brake linings, said attachment seats being located at a distance from said actuation surfaces.

Re-claim 16 Mohr et al. discloses, as shown in fig. 5, wherein an outer brake-lining holder 15, 20 at least partially surrounds an inner brake-lining holder 12 in the axial direction of the wheel axle.

Re-claim 17 Mohr et al. discloses, as shown in fig. 5, orienting the actuation surface 12a of the inner brake-lining holder is directed toward a corresponding actuation surface 20a of the outer brake-lining holder.

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Re-claim 18 Mohr et al. discloses, as shown in fig. 5, axially fixing said activating mechanism is axially fixed in relation to the wheel-axle housing and comprises a separating member 22 acting between said actuation surfaces for mutual axial displacement of the brake-lining holders.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 6-8 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohr et al. in view of Antony et al. (U.S. Patent Number 5,433,298).

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Re-claims 6, 7, 19, and 20 Mohr et al. failed to disclose wherein said separating member consists of a cam element, an S-cam, rotatable about a camshaft extending substantially at right angles to the wheel axle.

Antony et al. teaches, as shown in fig. 1-2, a cam element 8, can be readable as an S-cam, rotatable about a camshaft 45 extending substantially at right angles to the wheel axle.

It would have been obvious to one of ordinary skill in the art to have merely modify the separating member of Mohr et al., in view of the teaching of Antony et al., in order to actuate the brake lining toward or away from the brake disc.

Re-claims 8 and 21 Mohr et al. as modified failed disclosed wherein the cam element is a Z-cam.

It would have been obvious to one of ordinary skill in the art to modify the cam element to a Z-cam, since it has been held within the ordinary skill in the art to make a change in form or shape on the basis of its suitability for the intended use is a matter of obvious design choice. In re Dailey, 149 USPQ47 (CCPA 1976).

11. Claims 12 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Mohr et al. in view of Thiel et al. (U.S. Patent Number 5,111,914).

Re-claims 12 and 13 Mohr et al. failed to disclose wherein the brake-lining holders are both arranged to slide along two mutually parallel suspension axles and wherein the outer brake-lining holder can be pivoted upward about one of the



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suspension axles between a downward pivot operating position and an upward pivot position.

Thiel et al. teaches, as shown in fig. 1-3, a disc brake with brake lining holders slide along two parallel arms 39,40 and the outer brake-lining holder can be pivoted upward about one of the suspension axles between a downward pivot operating position and an upward pivot position, see abstract.

It would have been obvious to one of ordinary skill in the art to merely modify the separating member of Mohr et al., in view of the teaching of Thiel et al., in order to ease servicing with respect to the change of brake linings.

12. Claims 9, 10, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohr et al. in view of Thiel et al. as applied to claims 6 and 19 above, and further in view of Severinsson (U.S. Patent Number 5,833,035).

Re-claims 9, 10, 22, and 23 Mohr et al. as modified disclosed a S-cam with needle-roller bearings are placed between the cam element and the actuation surfaces but failed to disclose wherein the cam element has a wedge-shaped cross section.

Severinsson teaches, as shown in fig. 1, a disc brake with a cam element 19 having a wedge-shaped cross section.

It would have been obvious to one of ordinary skill in the art to utilize a cam element having a wedge-shaped cross section into the disc brake of Mohr et al. as modified, in view of the teaching of Severinsson, since it has been held within the ordinary skill in the art to make a change in form or shape on the basis of its suitability

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for the intended use is a matter of obvious design choice. In re Dailey, 149 USPQ47 (CCPA 1976).

13. Claims 11 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohr et al. in view of Thiel et al. as applied to claims 6 and 19 above, and further in view of Gardner (U.S. Patent Number 3,830,343).

Re-claims 11 and 24 Mohr et al. as modified failed to disclose wherein the activating lever, connected in a rotationally fixed manner to the camshaft, has an end portion for actuation by an actuator rod from a power member.

Gardner teaches, as shown fig. 1-5, a disc brake comprising an activating lever 57, connected in a rotationally fixed manner to a camshaft 65, having an end portion for actuation by an actuator rod 56 from a power member 43.

It would have been obvious to one of ordinary skill in the art to have modify activating lever of Mohr et al. as modified, in view of the teaching of Gardner, since it has been held within the ordinary skill in the art to modify the activating lever that has the same intended function to actuate the brake lining toward or away from the brake disc is a matter of obvious design choice.

14. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohr et al. in view of Antony et al. as applied to claim 19 above, and further in view of Thiel et al. (U.S. Patent Number 5,111,914).

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Mohr et al. as modified failed to disclose wherein the brake-lining holders are both arranged to slide along two mutually parallel suspension axles and wherein the outer brake-lining holder can be pivoted upward about one of the suspension axles between a downward pivot operating position and an upward pivot position.

Thiel et al. teaches, as shown in fig. 1-3, a disc brake with brake lining holders slide along two parallel arms 39,40 and the outer brake-lining holder can be pivoted upward about one of the suspension axles between a downward pivot operating position and an upward pivot position, see abstract.

It would have been obvious to one of ordinary skill in the art to merely modify the separating member of Mohr et al. as modified, in view of the teaching of Thiel et al., in order to ease servicing with respect to the change of brake linings.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Runkle (U.S. Patent Number 4,544,045) discloses a mechanical actuator for a disc brake.

Hunnicutt et al. (U.S. Patent Number 5,000,294) discloses a self-adjusting caliper.

Stalmeir et al. (U.S. Patent Number 5,501,305) discloses a device for generating a reversible working stroke.

Blosch et al. (U.S. Patent Number 6,173,820 B1) discloses an electric-motor brake apparatus.

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Tamor (U.S. Patent Number 6,286,635 B1) discloses a braking system with actively controlled caliper retractor.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 703-308-3427.

The examiner can normally be reached on Mon.-Fri. from 9:00 A.M. to 3:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder, can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*M. Sy*  
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June 10, 2004

*M. C. Graham*  
6/16/2004  
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